

Psychiatric Impairment Among Adolescents Engaging in Different Types of Deliberate Self-Harm

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This retrospective chart review study of 227 participants examined the psychiatric profiles of outpatient adolescents ages 12 to 19 years ($M = 15.08$ years, $SD = 1.72$ years) engaging in different types of deliberate self-harm (DSH) behaviors. Participants were divided into four groups: no deliberate self-harm (NoDSH; $n = 119$), nonsuicidal self-injury only (NSSI only; $n = 30$), suicide attempt only ($n = 38$), and suicide attempt plus NSSI ($n = 40$). Those who attempted suicide were more likely to have major depressive disorder and/or posttraumatic stress disorder than those who engaged in NSSI only. Those who engaged in any type of DSH were more likely to have features of borderline personality disorder than those who did not engage in DSH. The suicidal ideation levels of those in the NSSI group were similar to those in the NoDSH group. Findings offer empirical support for the importance of distinguishing between suicidal and nonsuicidal self-harm behaviors.

Deliberate self-harm (DSH), which includes suicide, suicide attempts (SA), and nonsuicidal self-injury (NSSI), is a substantial public health problem among adolescents in the United States. Suicide accounted for approximately 4,010 deaths among 15- to 25-year-olds in 2002 (Kochanek, Murphy, Anderson, & Scott, 2004), and 8.5% of adolescents reported attempting suicide in 2003 (Grunbaum et al., 2004). In addition, NSSI, defined as purposefully hurting oneself without the conscious intent to die (Favazza, 1998), appears to be increasing within recent years. For example, although

Garrison et al. (1993) reported a prevalence rate of less than 3% among community dwelling adolescents in 1993, more recent estimates of the prevalence of NSSI fall around 15% (Muehlenkamp & Gutierrez, 2004; Ross & Heath, 2002). In addition, a review study of hospital records of discharge diagnoses of deliberate self-harm among adolescents indicated that the rates of self-cutting (regardless of intent) increased more than threefold from 1990 to 2000 (Olsson, Gameroff, Marcus, Greenberg, & Shaffer, 2005). Both suicide attempts and NSSI are concerning but, until recently, little empirical research has addressed how the two behaviors are different, besides the feature inherent in the definition (i.e. presence or absence of suicidal intent). The study presented here sought to identify differences in the psychiatric profiles of those who engage in different types of DSH.

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Empirically based etiological theories of suicide document the importance of psychopathology (with a focus on major depressive disorder [MDD]), past suicidal behaviors, hopelessness, isolation, and suicidal ideation (see Gould, Greenberg, Velting, & Shaffer, 2003, for a comprehensive review of suicide in adolescents). However, explanations of NSSI remain largely theoretical at present with limited empirical support. Theories of NSSI include psychodynamic, behavioral, and emotion-regulation based causal models (Chapman, Gratz, & Brown, 2006; Linehan, 1993). The emotion-regulation model has received the most empirical support and proposes that NSSI functions to reduce distress associated with interpersonal and intrapersonal stressors such as psychiatric impairment. It is likely that psychopathology plays a role in the genesis of NSSI. However, the specific forms of psychopathology that are associated with NSSI in particular (as distinct from suicidal behaviors) remain unclear, especially in adolescents. Few studies have examined the psychiatric profiles (with the exception of mood disorders) of adolescents who engaged in NSSI, and no empirical studies have evaluated whether there are certain psychiatric diagnoses that may differentiate between people at risk for engaging in suicide attempts versus people at risk for engaging in NSSI.

For example, Garrison and colleagues (1993) found that among a community sample of adolescents, those diagnosed with MDD, obsessive-compulsive disorder, and/or a specific phobia were more likely to engage in NSSI than those without these disorders. However, in a multivariate model, only a diagnosis of MDD was associated with NSSI. In a recent study, Nock, Joiner, Gordon, Lloyd-Richardson, and Prinstein (2006) found elevated rates of MDD (42%), posttraumatic stress disorder (PTSD; 24%), externalizing disorders (any externalizing disorder; 63%), and substance use disorders (any substance use disorder; 60%) among 89 adolescents with a recent history of NSSI admitted to an inpatient unit. In addition, 52% of the participants met criteria for borderline personality disorder (BPD). Although informative, a major weakness of this study is the lack of comparison group. Because of the limited amount of research addressing diagnostic differences across adolescents engaging in different types of self-harm, a main goal of our study was to investigate whether certain diagnoses are associated with certain types of DSH.

A good deal of research has indicated elevated depression levels in suicide attempters compared to controls and people who engage in NSSI compared to controls (Garrison et al., 1993; Gould et al., 1998; Ross & Heath, 2002). However, only one previous study has examined the relative depression levels of adolescents who have engaged in NSSI only and those who have engaged in suicide attempts only. Muehlenkamp and Gutierrez (2004) classified a community sample of

adolescents into one of three groups: no deliberate self-harm (NoDSH) behavior, NSSI only, and suicide attempts (SA) only. The two self-harm groups reported significantly higher levels of depression than the NoDSH group but did not differ from one another indicating a similar level of psychiatric impairment. Our study addresses whether levels of depression differ among psychiatrically impaired adolescents who have not engaged in any type of DSH and those who have engaged in NSSI only, SA only, and SA + NSSI. In addition, we evaluate if the depression levels of those who have engaged in NSSI only differ than those who have attempted suicide or engaged in both NSSI and suicide attempts.

Suicidal ideation is associated with an increased likelihood of making a suicide attempt among adolescents (Fergusson, Horwood, Ridder, & Beautrais, 2005; Wichstrom, 2000). However, the relationship between suicidal ideation and engagement in NSSI is less clear. One justification for distinguishing between NSSI and suicidal behaviors is the fact that NSSI is not accompanied by suicidal intent. In fact, some theorists have suggested that NSSI is the antithesis of suicide and that people engage in NSSI to prevent themselves from attempting suicide (Firestone & Seiden, 1990). However, little empirical research has examined whether levels of suicidal ideation (not linked to the NSSI behavior) among people who engage in NSSI are more similar to those who do not engage in any type of DSH or to those who engage in suicidal behaviors. Of the research that has addressed this issue, the findings are somewhat confusing. For example, Muehlenkamp and Gutierrez (2004) reported that a NSSI-only group did not differ from a suicide attempt group on level of suicidal ideation. In addition, the Garrison et al. (1993) study found that the adolescents who engaged in NSSI reported elevated suicidal ideation (again, not linked to the NSSI behaviors) compared to those who did not engage in NSSI. A limitation for both of these studies is that they were conducted among community samples of adolescents where suicidal ideation tends to be low. Our study evaluates the relative levels of suicidal ideation among psychiatrically impaired adolescents who have engaged in different types of DSH, including those who have not engaged in any DSH. Theoretically, it would be expected that those who engage in NSSI only would have suicidal ideation levels similar to those who have not engaged in any type of DSH and lower suicidal ideation levels than those who have engaged in suicidal behaviors.

To our knowledge, this is the first study to compare four distinct groups of deliberate self-harming, largely minority adolescents presenting to a hospital-based outpatient mental health clinic on diagnostic profiles and severity of depression and suicidal ideation. Because of the paucity of empirical research in this area, the

majority of the analyses were exploratory in nature. We controlled for gender in all analyses, because rates of suicide, SA, and NSSI vary by gender and rates of certain psychiatric diagnoses (e.g., depression) vary by gender; thus, we wanted to determine if associations were found after controlling for differences in gender. In analyses, we first examined the diagnostic profiles associated with DSH versus no DSH and across the three DSH groups. We then compared depression levels and suicidal ideation levels among the four distinct groups (NoDSH, NSSI only, SA only, and SA + NSSI), predicting that those in the NSSI group would report suicidal ideation levels similar to those in the NoDSH group and lower than those in the SA and SA + NSSI groups. Finally, we evaluated the extent to which the frequency and duration of DSH behaviors impacted the diagnostic profiles and psychological functioning (i.e., depression and suicidal ideation) among the three DSH groups.

METHOD

Participants

The participants for this study were consecutively admitted (December 1998 to December 2001) outpatients to an adolescent depression and suicide program at an urban hospital in New York that specializes in treating depressed adolescents, the majority of whom presented with suicidal ideation, suicidal behavior, and/or NSSI within the preceding 16 weeks. Two hundred forty adolescents were admitted to this specialty outpatient clinic from December 1998 to December 2001. However, only 227 participants (95%) had adequate data to be included in the analyses. The majority of the participants were female (68%), and their ages ranged from 12 to 19 years ($M = 15.08$ years, $SD = 1.72$ years). A majority of the sample self-identified as Hispanic (69%), followed by African American (20%), Caucasian (4%), and other (4%) ethnicities (of the remaining participants, 3 were Asian and 1 was unidentified). The ethnic distribution is reflective of the ethnic composition of the surrounding community.

Measures

DSH. Self-harm behaviors were assessed with the Lifetime Parasuicide Count (LPC; Comtois & Linehan, 1999), a semistructured interview designed to assess the lifetime prevalence of a range of self-harm behaviors. Participants are queried in detail about their history and most recent act of self-harm. In addition, participants are asked to endorse the number of times they have engaged in specified self-harm behaviors

during their lifetime (e.g., cutting, burning, overdosing, jumping from high place, ingesting poison). For each behavior endorsed, participants are asked to specify the number of times they engaged in the behavior with intent to die, with ambivalent intent to die, and with no intent to die. Ambivalent intent was explained to the participants as “one part of you wants to die but another part of you doesn’t.” All responses in which a participant expressed ambivalent or full intent to die were classified as a suicide attempt, and responses with no intent to die were classified as NSSI. Although psychometric properties of the LPC have not been formally published, other researchers have relied on the LPC as an assessment tool for suicide attempts and NSSI among adolescents (Katz, Cox, Gunasekara, & Miller, 2004). In one pilot study that used the LPC and included 30 male adult prison inmates, high test–retest reliability over 4 weeks was reported ($r = .89$ for total number of DSH acts and $r = .98$ for type of methods used; Flores, 2001). In addition, this study found good interrater reliability (i.e., 100% agreement for number of NSSI acts and method used) and predictive validity for the LPC in predicting future incidents of self-injury when compared to another structured clinical interview (Flores, 2001).

Psychiatric diagnoses. Axis I psychiatric disorders were diagnosed using the Schedule for Affective Disorders and Schizophrenia for school-aged children (K-SADS; Puig-Antich & Chambers, 1978). The K-SADS is a semistructured interview designed to categorically diagnose current *Diagnostic and Statistical Manual of Mental Disorders* (4th ed. [DSM-IV]; American Psychiatric Association, 1994) Axis I disorders among children and adolescents. The K-SADS is one of the most widely used diagnostic instruments with children and adolescents and has been found to have good reliability (i.e., interrater reliability ranging from 93 to 100% agreement and 18-day test–retest reliability ranging from $r = .77$ – 1.00 for diagnosis of MDD, bipolar disorder, generalized anxiety disorder, conduct disorder, and oppositional defiant disorder; Ambrosini, 2000; Kaufman et al., 1997) and validity (i.e., evidence of concurrent validity when compared to self-report rating scales and predictive validity; Kaufman et al., 1997; Lewinsohn, Rohde, Klein, & Seeley, 1999). Interrater reliability is not available in our sample because of the format of the study clinic’s intake process. However, all clinicians were supervised in their administration of the K-SADS and diagnostic conclusions were reached via consensus by the clinician and the supervisor.

Features of BPD were assessed with the Structured Clinical Interview for DSM-IV Personality Disorders Questionnaire, Borderline Personality Disorder Module

(SCID-II-BPD; First, Gibbon, Spitzer, Williams, & Benjamin, 1997). The SCID-II is a semistructured diagnostic interview designed to assess the presence/absence as well as severity of *DSM-IV* personality disorders. Only the BPD module was used for our study. Although empirical validity is somewhat limited, the SCID-II has been used in previous research studies to assess and diagnose personality disorders in adolescents, displaying adequate interrater ($\kappa = .48$) and test-retest reliability (kappa = .40–.90 over a period of approximately 2½ weeks) depending upon the rater (Chanen et al., 2004). For the purposes of this study, participants were said to have features of BPD if they exhibited four of the nine symptoms, excluding the self-injury/parasuicide item. Again, consensus regarding the number of symptoms endorsed and final diagnosis of BPD was agreed upon by the clinician administering the SCID-II and the supervisor.

Depression. Severity of depressive symptoms was assessed using the Beck Depression Inventory II (BDI II; Beck, Steer, & Brown, 1996), a 21-item self-report measure designed to assess the cognitive, affective, behavioral, and somatic symptoms of depression within the previous 2-week period. Each item is anchored on a 4-point scale tailored to the specific item where zero indicates no symptom, and 3 indicates that the symptom is severe. Scores are summed for a range of 0 to 63, with a cutoff score of 16 indicating risk for a major depressive episode. The total score of the BDI without the suicide item was used for this study. The BDI has been used extensively with adolescents (e.g., Gould et al., 2005) and has been demonstrated to be reliable (coefficient $\alpha = .80-.92$; Steer, Kumar, Ranieri, & Beck, 1998) and valid (i.e., BDI scores discriminated depressed vs. non-depressed adolescents with a sensitivity of 87% and a specificity of 71%; Bennett et al., 1997) for use with an adolescent outpatient population, including Hispanic adolescents (Rivera, Bernal, & Rossello, 2005).

Suicidal ideation. Suicidal ideation was assessed with the Suicidal Ideation Questionnaire (SIQ-Jr; Reynolds, 1988), a 15-item self-report measure designed to assess extent of suicidal ideation within the preceding month. Items list thoughts pertaining to suicide and the respondent indicates the frequency of that thought on a 7-point scale ranging from, 0 (*I never had this thought*), 1 (*I had this thought before but not in the past month*), 2 (*about once a month*), 3 (*couple of times a month*), 4 (*about once a week*), 5 (*couple of times a week*), 6 (*almost every day*), 7 (*almost every day*). Scores on the SIQ-Jr are tallied for a range of 0 to 90, with a score of 31 or greater indicating “at-risk” status (Gould et al., 2005). The SIQ-Jr has demonstrated good reliability has good

reliability (internal consistency = 0.91 and test-retest reliability over approximately 3 weeks = 0.89) and validity (e.g., differentiating depressed from nondepressed groups) among African American and Hispanic adolescents (Reynolds & Mazza, 1999).

Procedure

This study was a retrospective, chart review study that used archival data collected from the adolescents’ medical records. Data from the medical records used in our study were de-identified such that each participant was identified by a preassigned number not affiliated with any personally identifying information. The measures used in this study are part of the standard clinical assessment battery given to adolescents admitted to the subspecialty outpatient clinic for depressed and suicidal youth. During the course of their initial appointments, patients complete a packet of self-report questionnaires in a semiprivate room within the clinic and are later administered semistructured diagnostic interviews by a trained graduate student clinician, who is supervised by a licensed psychologist. All student clinicians are trained to reliability on each semistructured interview by supervising psychologists who themselves were trained to reliability by recognized national experts. Because of the fact that these assessment tools are used for clinical purposes and given that the data were archival and deidentified, the Institutional Review Board did not require the investigators to obtain informed consent.

All participants were divided into one of four deliberate self-harm groups based on their responses on the LPC: no deliberate self-harm (NoDSH), NSSI only, suicide attempt only (SA only), and *both* suicide attempt(s) and NSSI (SA + NSSI). For example, a patient who reported engaging in several self-injurious behaviors but said that none of the behaviors involved suicidal intent would be grouped in the NSSI group. A patient who reported many types of DSH behaviors, some that included intent, some that did not, was grouped in the SA + NSSI group. Finally, if all behaviors engaged in included suicidal intent, the patient would be placed in the SA group. Note that the participants who endorsed a deliberate self-harm behavior with ambivalent intent were combined with those who endorsed an intent to die to create the “SA only” group. This grouping is based on the “non-zero rule” followed by experts in the field (i.e., O’Carroll et al., 1997), which dictates that when a person has even the slightest intent to die when engaging in self-harm, the act should be considered a suicide attempt. Descriptive statistics were used to determine the frequency and types of self-harm behaviors for the entire group (see Table 1). As expected, female gender was associated with increased likelihood of engaging in DSH.

TABLE 1
Demographic and Psychiatric Characteristics of Four DSH Groups

<i>Variable</i>	<i>NoDSH^a</i>	<i>NSSI Only^b</i>	<i>SA Only^c</i>	<i>SA + NSSI^d</i>
Female	58 (69)	83 (25)	82 (31)	75 (30)
Age	14.79 (1.77)	15.47 (1.63)	15.26 (1.61)	15.45 (1.58)
Ethnicity				
Hispanic	66 (78)	83 (25)	76 (29)	63 (25)
African American	23 (27)	12 (3)	18 (7)	23 (9)
Other Ethnicity	12 (14)	7 (2)	3 (1)	15 (6)
Types of Self-Injury				
Cut		67 (20)	53 (20)	95 (38)
Burn		10 (3)	5 (2)	28 (11)
Overdose		33 (10)	68 (26)	50 (20)
Hang/Strangle		0 (0)	16 (6)	18 (7)
Jumped		0 (0)	8 (3)	15 (6)
Shot		0 (0)	0 (0)	3 (1)
Poison		0 (0)	8 (3)	13 (5)
Asphyxiation		3 (1)	11 (4)	5 (2)
Drown		0 (0)	3 (1)	18 (7)
Stab/Puncture		7 (2)	8 (3)	18 (7)
Other		10 (3)	8 (3)	3 (1)

Note: Age lists *M* (*SD*); all other values are % (*n*). NoDSH = no deliberate self-harm group, NSSI only = nonsuicidal self-injury only group, SA only = suicide attempt only group, SA + NSSI = nonsuicidal self-injury and suicide attempt group.

^a*n* = 119. ^b*n* = 30. ^c*n* = 38. ^d*n* = 40.

RESULTS

Analysis of Missing Data

Analysis of missing data revealed that those with missing data did not differ on age, gender, ethnicity, or DSH status than those with data for the respective outcome measures: K-SADS diagnosis, BDI, and SIQ scores. However, a chi-square analysis did indicate an overall difference in the distribution of those with missing data for features of BPD across the DSH groups such that more people in the SA-only group than the other three groups (NoDSH, NSSI only, SA + NSSI) were missing data regarding BPD features, $\chi^2(3, N = 227) = 15.32, p = .001$. It is likely that the missing data for this group would lead to an underestimation rather than an overestimation of BPD features; therefore, all analyses were conducted using pairwise deletion.

Descriptive Statistics: Demographics and Types of DSH

The most commonly endorsed method of DSH (regardless of intent) was cutting (*n* = 78), followed by overdose (*n* = 56), burning (*n* = 16), and strangling self (*n* = 13; see Table 1 for further breakdown). Descriptive information regarding the demographic and DSH information is presented in Table 1. Of the 227 study participants, 48% (*n* = 109) endorsed having engaged in some type of DSH behavior. The distribution of

the participants when divided into four groups based on intent of DSH was as follows: 119 (52%) participants engaged in no type of self-injury, 30 (13%) participants engaged in *only* NSSI, 38 (16%) participants reported *only* SA, and 40 (17%) participants engaged in both SA *and* NSSI. One participant in the SA + NSSI group was identified as an outlier (reporting more than 1,800 acts of self-harm) and excluded from all analyses. Female gender was associated with engaging in DSH, $\chi^2(3, N = 227) = 12.90, p = .005$, and was therefore controlled for in each analysis. Specific type of DSH was not significantly associated with gender, $\chi^2(2, N = 227) = 0.65, p = .65$. Age of the participants did not differ based on group membership, $F(3, 223) = 2.47, p = .06$, nor did ethnicity, $\chi^2(6, N = 226) = 7.43, p = .28$.

Group Differences in Psychiatric Diagnosis and Psychological Functioning

Among all participants, the most common Axis I diagnosis was MDD (*n* = 119, 52%). Further, 21% (*n* = 48) of the sample exhibited at least four symptoms of BPD and 57% (*n* = 129) had more than one Axis I diagnosis. Table 2 presents the breakdown of diagnoses by group, adjusted for gender. A series of logistic regression analyses, controlling for gender, was conducted to determine which diagnoses were associated with certain types of DSH compared to NoDSH. Analyses indicated that those in the SA group (odds ratio (OR) = 4.75, 95% confidence interval [CI] = 1.94–11.47, *p* = .001) and

TABLE 2
Psychiatric Diagnoses Across Deliberate Self-Harm Groups Adjusting for Gender

Variable	Total Sample ^a %	NoDSH ^b %	NSSI Only ^c %	SA Only ^d %	SA + NSSI ^e %	χ^2	df	p
Axis I Diagnosis								
MDD	52	38	46	77	77	23.95	3	<.001
Dysthymia	19	16	28	25	14	3.71	3	.28
Depression, NOS	16	20	3	15	16	3.82	3	.27
PTSD	9	3	6	21	22	19.66	3	<.001
Any Anxiety Disorder	36	31	32	44	47	4.80	3	.18
Any Eating Disorder	4	1	8	6	5	4.73	3	.19
Any Disruptive Behavior Disorder	23	22	33	34	17	2.64	3	.45
Any Substance Use Disorder	8	11	7	14	20	5.89	3	.12
Features of BPD ^f	21	6	27	38	44	28.69	3	<.001

Note: NoDSH = no deliberate self-harm group; NSSI only = nonsuicidal self-injury only group; SA only = suicide attempt only group; SA + NSSI = nonsuicidal self-injury and suicide attempt group; MDD = major depressive disorder; NOS = not otherwise specified; PTSD = posttraumatic stress disorder; BPD = borderline personality disorder.

^a*n* = 227. ^b*n* = 119. ^c*n* = 30. ^d*n* = 38. ^e*n* = 40. ^fFour or more symptoms of BPD, excluding the self-injury item, as rated on the SCID-II. Percentages adjusted for gender. Chi-square comparing each model with only gender and then with gender and DSH group entered, reflects main effect of DSH group.

those in the SA + NSSI group (OR = 4.79, 95% CI = 2.07–11.06, $p < .001$) were significantly more likely to be diagnosed with MDD than those in the NoDSH group, whereas those in the NSSI-only group (OR = 1.40, 95% CI = .62–3.18, $p = .42$) were not. Further, those in the SA-only group (OR = 9.11, 95% CI = 2.23–37.22, $p = .002$) and the SA + NSSI group (OR = 10.08, 95% CI = 2.54–40.05, $p = .001$) were more likely than those in the NoDSH group to be diagnosed with PTSD, whereas those in the NSSI-only group were not (OR = 1.03, 95% CI = .10–10.40, $p = .98$). Finally, each DSH group—NSSI only (OR = 3.48, 95% CI = 1.19–10.21, $p = .02$), SA only (OR = 6.50, 95% CI = 2.40–17.57, $p < .001$), and SA + NSSI (OR = 9.66, 95% CI = 3.73–25.01, $p < .001$)—was associated with a greater likelihood of having four or more symptoms of BPD compared to the NoDSH group.

Our next step was to determine if any of the three diagnoses (MDD, PTSD, and BPD features) was significantly linked to having engaged in DSH compared to the NoDSH group or linked more strongly with one DSH group. Results indicated that with NSSI only as the comparison group and controlling for gender, those in the SA-only group (OR = 3.43, 95% CI = 1.17–10.00, $p = .03$) and the SA + NSSI group (OR = 3.55, 95% CI = 1.24–10.16, $p = .02$) were more likely to be diagnosed with MDD. After controlling for gender, those in the SA-only group (OR = 8.93, 95% CI = 1.04–76.92, $p = .046$) and the SA + NSSI group (OR = 10.09, 95% CI = 1.18–85.97, $p = .035$) were more likely than those in the NSSI-only group to be diagnosed with PTSD. Rates of MDD and PTSD did not significantly differ between the SA-only group and the SA + NSSI group. Finally, in regards to BPD features, the initial model with only gender covaried

indicated that each group (NSSI only, SA only, and SA + NSSI) was equally likely to have features of BPD.

To determine whether each diagnosis (MDD, PTSD, and BPD features) was uniquely associated with DSH status, we entered MDD, PTSD, BPD features, and substance use disorder (to be conservative because the rates of substance use were somewhat higher, though not significantly so, in the SA-only and SA + NSSI groups compared to the NSSI group) into a multinomial logistic regression, controlling for gender, predicting group membership. Results indicated that for the SA-only and the SA + NSSI groups, each diagnosis (MDD, PTSD, and BPD features) was significantly and uniquely associated with being in the SA or SA + NSSI group compared to the NoDSH group (SA only–MDD, $B = -1.23$, 1, $p < .01$; PTSD, $B = -1.84$, 1, $p = .02$; BPD, $B = -1.48$, 1, $p < .01$; SA + NSSI group–MDD, $B = -1.51$, 1, $p < .01$; PTSD, $B = -1.97$, 1, $p < .01$; PTSD, $B = -1.74$, 1, $p < .01$). Further, as expected, only BPD features ($B = -1.19$, 1, $p = .04$), not MDD ($B = -.16$, 1, $p = .72$) or PTSD ($B = .13$, 1, $p = .02$) was significantly associated with being in the NSSI-only group compared to the NoDSH group. Substance use disorder was not significantly predictive of being in any one of the DSH categories compared to the NoDSH group; the results remained the same when substance use disorder was not included in the model.

Finally, we examined the group differences in the continuous outcome variables: BDI and SIQ scores, controlling for gender. An analysis of covariance (ANCOVA) indicated an overall effect for group membership (NoDSH, NSSI only, SA only, SA + NSSI) after controlling for gender on depression scores, $F(3, 206) = 10.55$, $p < .001$ (see Table 3). Post hoc tests (Bonferroni corrected) showed that the participants in the NoDSH

TABLE 3
Continuous Outcome Variables Across Deliberate Self-Harm Groups Adjusting for Gender

Variable	NoDSH ^a	NSSI Only ^b	SA Only ^c	SA + NSSI ^d	$F_{\text{group membership}}$	df	p
BDI							
Adjusted Mean ^e	12.33 ^f	15.32 ^g	17.46	23.61	10.55	3, 207	< .001
Standard Error	1.03	2.03	1.85	1.74			
SIQ							
Adjusted Mean ^e	14.40 ^h	15.63 ⁱ	35.86	41.55	24.82	3, 198	< .001
Standard Error	1.89	3.68	3.29	3.10			

Note. NoDSH = no self-harm group; NSSI only = non-suicidal self-injury only group; SA only = suicide attempt only group; SA + NSSI = non-suicidal self-injury and suicide attempt group; BDI = Beck Depression Inventory; SIQ = Suicidal Ideation Questionnaire.

^a $n = 119$. ^b $n = 30$. ^c $n = 38$. ^d $n = 40$. ^eMeans adjusted for gender. ^fBDI scores for NoDSH group significantly lower than SA + NSSI group but not than SA only or NSSI only groups (after Bonferroni correction). ^gBDI scores for NSSI only group significantly lower than those in the SA + NSSI group but not the other two groups (after Bonferroni correction). ^hSIQ scores for the NoDSH group significantly lower than the SIQ scores for the SA only group and the NSSI + SA group but not than the NSSI only group (after Bonferroni correction). ⁱSIQ scores for the NSSI only group significantly lower than the SIQ scores for the SA only group and the SA + NSSI group (after Bonferroni correction).

group had lower depression scores than the SA + NSSI group (adjusted mean difference = -11.28 , $p < .001$) but not the SA-only group (adjusted mean difference = -5.13 , $p = .11$) or the NSSI-only group (adjusted mean difference = -2.99 , $p = 1.00$). Further, those in the NSSI-only group and the SA-only group did not significantly differ from one another on level of depression (adjusted mean difference = -2.14 , $p = 1.00$). Those in the NSSI-only group had significantly lower depression scores than the combined group (adjusted mean difference = -8.29 , $p = .01$), and those in the SA-only group had lower depression scores than the combined group, but the difference did not reach statistical significance (adjusted mean difference = -6.15 , $p = .10$).

When controlling for only gender, an overall effect for group membership (NoDSH, NSSI only, SA only, SA + NSSI), $F(3, 198) = 24.82$, $p < .001$, was identified for suicidal ideation (see Table 3). Specifically, post hoc tests (Bonferroni corrected) indicated that the NoDSH group had significantly lower suicidal ideation scores than the SA-only group (adjusted mean difference = -21.46 , $p < .001$), and the SA + NSSI group (adjusted mean difference = -27.15 , $p < .01$),

but not the NSSI-only group (adjusted mean difference = -1.2 , $p = 1.0$). Contrary to the depression findings, the NSSI-only group also had significantly lower suicidal ideation scores than the other two DSH groups: SA only (adjusted mean difference = -20.24 , $p < .001$) and SA + NSSI group (adjusted mean difference = -25.92 , $p < .001$). Finally, the SA-only group and the combined group reported levels of suicidal ideation that did not significantly differ from one another (adjusted mean difference = -5.69 , $p = 1.00$).

The Role of Frequency, Duration, and Recency of DSH Behaviors

The final set of analyses examined of the duration, recency, and frequency of the DSH behaviors. With regard to the frequency of DSH behaviors, the group who engaged in both suicide attempts and NSSI reported engaging in significantly more acts of DSH ($M = 16.33$, $SD = 22.44$) than the SA-only group ($M = 3.18$, $SD = 4.39$) and the NSSI-only group ($M = 2.73$, $SD = 4.03$), $F(2, 105) = 11.31$, $p < .001$ (see Table 4). Within the group that engaged in both SA

TABLE 4
Characteristics of Self-Harm: Frequency, Length, and Recency of DSH Behaviors

Variable	NSSI Only ^a	SA Only ^b	SA + NSSI ^c	$F_{\text{group membership}}$	df	p
Total No. DSH Behaviors	2.73 (4.03)	3.18 (4.39)	16.33 (22.44) ^d	11.31	2,105	< .001
No. SA	0.00	3.18 (4.39)	4.98 (9.49)	-1.06	2,105	.290
Length of DSH (in Days)	269.07 (528.71)	522.19 (797.48)	741.11 ^e (789.46)	3.25	2,98	.043
Recency of DSH (in Days)	386.78 (536.17)	315.03 (540.99)	174.35 (352.11)	1.67	2,98	.200

Note: Values are $M(SD)$. Frequency and recency data was missing for 7 participants. DSH = deliberate self-harm; NSSI only = nonsuicidal self-injury only group; SA only = suicide attempt only group; SA + NSSI = nonsuicidal self-injury and suicide attempt group.

^a $n = 30$. ^b $n = 38$. ^c $n = 40$. ^dThose in the SA + NSSI group engaged in significantly more acts of DSH than those in the NSSI only group and those in the SA only group (after Bonferroni correction). ^eThose in the SA + NSSI group engaged in DSH for a significantly longer period of time than those in the NSSI only group (after Bonferroni correction).

and NSSI, the mean number of times they engaged in NSSI was 11.35 ($SD = 20.70$), and the mean number of times they engaged in suicidal acts of self-harm was 4.98 ($SD = 9.49$).

We next examined the duration and recency of engagement in DSH for each DSH group (NSSI only, SA only, and SA + NSSI; see Table 4). The majority (51%) of the participants had engaged in some type of DSH within the preceding 2-month period. Seventy-seven percent engaged in DSH within the past year and 85% within the past 2 years. As is indicated in Table 4, the participants in the SA + NSSI group engaged in DSH for the longest duration and more recently than the other two groups.

As indicated in the preceding section, a diagnosis of MDD and/or PTSD was associated with being in the SA-only group and the SA + NSSI group compared to the NSSI-only group. Therefore, in this post hoc set of analyses, we sought to determine the extent to which the frequency, duration, and recency of the DSH behaviors may have accounted for the different rates of MDD rather than the type of DSH behavior (see Table 2 for percentage, adjusted only for gender, of each disorder by DSH group). In a logistic regression predicting presence of MDD controlling for the frequency, duration, and recency of DSH behaviors, neither group (SA or SA + NSSI) was significantly more likely to be diagnosed with MDD than the NSSI group. However, although the differences in rates of MDD were no longer statistically significant (likely because of low power linked to the small sample size), the observed differences in the adjusted percentages in rates of MDD across groups remained quite large (see Table 5 for the percentage of each disorder by group adjusted for frequency, recency, and duration of DSH behaviors), as

TABLE 5
Psychiatric Diagnoses Across DSH Groups Adjusting for Frequency, Length, and Recency of DSH Behaviors

Variable	Total DSH Sample ^a %	NSSI Only ^b %	SA Only ^c %	SA + NSSI ^d %
Axis I Diagnosis				
MDD	67	56	73	69
PTSD	17	— 7 ^e	24	27
BPD Features	36	30	41	42

Note: Percentages are adjusted for gender and DSH characteristics (frequency, duration, recency). DSH = deliberate self-harm; NSSI only = nonsuicidal self-injury only group; SA only = suicide attempt only group; SA + NSSI = nonsuicidal self-injury and suicide attempt group; MDD = major depressive disorder; PTSD = posttraumatic stress disorder; BPD = borderline personality disorder.

^a $n = 108$. ^b $n = 30$. ^c $n = 38$. ^d $n = 40$. ^eNegative proportion results from the statistical adjustments. The adjusted odds ratios for SA only and SA + NSSI versus NSSI only are 9.25 (95% confidence interval = 0.81–105.33) and 11.76 (95% CI = 0.97–143.26), respectively.

did the ORs. For example, in the model in which the frequency, recency, and duration of DSH was controlled, those in the SA-only group were over two times as likely as those in the NSSI-only group to be diagnosed with MDD ($OR = 2.15$, 95% CI = .60–7.72, $p = .24$), and those in the SA + NSSI group were nearly twice as likely to be diagnosed with MDD than those in the NSSI-only group ($OR = 1.78$, 95% CI = .47–6.65, $p = .39$). Therefore, although a substantial portion of the elevation in rates in the SA only and the combined group appears to be because of the duration and frequency of engaging in the behaviors, the specific type of DSH behavior is also associated with a diagnosis of MDD.

A similar finding resulted with regard to PTSD. Specifically, when duration, frequency, and recency of DSH behaviors were entered as covariates into a logistic regression model, DSH group membership (NSSI or SA only or SA + NSSI only) was no longer significantly associated with PTSD diagnosis; however, the differences in the percentage rates, as did the ORs, remained quite large. Table 5 provides the adjusted percentages of those with PTSD in each DSH group. In fact, the ORs in the model for which the duration and frequency were controlled comparing the SA-only group to the NSSI-only group ($OR = 9.25$, 95% CI = .81–105.33, $p = .07$) and the SA + NSSI group to the NSSI-only group ($OR = 11.76$, 95% CI = 0.97–143.26, $p = .05$), were similar to the ORs in the models for which those aspects of the DSH were not controlled (see previous section; OR without the control = 9.11 and 10.08, respectively). Therefore, it appears that accounting for the frequency, duration, and recency of the self-harm behaviors only slightly weakened the link between PTSD and specific type of self-harm behavior.

Unlike the results for depression and PTSD, controlling for the frequency, duration, and recency of the DSH behaviors did not change the results for BPD symptoms: The rates of BPD symptoms were somewhat elevated, though not significantly so, in the SA-only group compared to the NSSI-only group ($OR = 1.6$, 95% CI = .49–5.50, $p = .43$) and in the SA + NSSI group compared to the NSSI-only group ($OR = 1.7$, 95% CI = .50–5.83, $p = .39$). These results are also reported in Table 5.

Finally, we conducted ANCOVAs to determine the extent to which frequency, length, and recency of the DSH behaviors may have accounted for the differences in depression and suicidal ideation scores among the three DSH groups (NSSI only, SA only, SA + NSSI; see Table 6 for the adjusted means). In the overall model with depression as the outcome, group status (NSSI only, SA only, or SA + NSSI) was no longer significantly associated with BDI scores, $F(2, 91) = 1.22$, $p = .30$, and only length of DSH approached significance, $F(1, 92) = 3.92$, $p = .05$. Further, the adjusted

TABLE 6
Continuous Outcome Variables Across DSH Groups Adjusting for Frequency, Recency, and Duration of DSH Behaviors

Variable	NSSI Only ^a	SA Only ^b	SA + NSSI ^c	$F_{\text{group membership}}$	df	p
BDI						
Adjusted Mean ^d	17.17	18.87	22.32	1.22	2,91	.30
Standard Error	2.42	2.09	2.13			
SIQ						
Adjusted Mean ^a	20.26 ^e	37.20	38.34	5.95	2,91	.004
Standard Error	4.32	3.64	3.63			

Note: DSH = deliberate self-harm; NSSI only = nonsuicidal self-injury only group; SA only = suicide attempt only group; SA + NSSI = nonsuicidal self-injury and suicide attempt group; BDI = Beck Depression Inventory; SIQ = Suicidal Ideation Questionnaire.

^a $n = 30$. ^b $n = 38$. ^c $n = 40$. ^dMeans adjusted for gender, frequency, recency, and duration of DSH behaviors. ^eSIQ scores for the NSSI only group significantly lower than the SA only group and the SA + NSSI group (after Bonferroni correction).

means for each group did not significantly differ from one another. However, it is important to note that the mean difference in depression scores between the NSSI-only group and the SA + NSSI group was quite large (greater than 5 points in the BDI) and the failure to find an overall group difference was likely because of low power. Therefore, as with the findings regarding the psychiatric diagnoses, the variance in BDI scores across the NSSI, SA, and SA + NSSI groups was somewhat attenuated by the length of time engaging in DSH.

To determine the extent to which the frequency, duration, and recency of DSH behaviors impacted the pattern of results regarding SIQ scores, we conducted a subsequent ANCOVA controlling for gender, frequency, duration, and recency of DSH (see Table 6 for the adjusted means and the F for group membership). In the overall model, none of the covariates related to DSH characteristics were significant. Further, the pattern of results that the NSSI-only group had significantly lower SIQ scores than the SA-only group (adjusted mean difference = -16.95 , $p = .01$) and the SA + NSSI group (adjusted mean difference = -18.08 , $p = .01$), remained unchanged, $F(2, 92) = 5.94$, $p = .004$. In addition, the SA and the SA + NSSI group were similar on SIQ scores.

DISCUSSION

The main goal of our study was to examine the psychiatric profiles of a large group of mainly Hispanic adolescents who had engaged in different types of deliberate self-harm behaviors. As may be expected in a clinic specializing in the treatment of depressed and suicidal adolescents, the rates of DSH in this sample were quite high. Forty-nine percent reported engaging in some form of DSH, with 13% engaging in NSSI only, 17% engaging in SA only, and 18% of the sample reporting having engaged in both suicidal and nonsuicidal self-injurious

behaviors. Of those who engaged in any type of DSH, a large portion of them (more than one third) engaged in both types of DSH behaviors corroborating the high rates of overlap between suicidal and nonsuicidal self-injurious behaviors identified in previous studies (Brown, Comtois, & Linehan, 2002; Nock et al., 2006). Although ethnicity and age were not related to engagement in DSH, female gender was associated with a greater likelihood of engaging in any type of DSH. However, there were no gender differences in regarding the type of DSH engaged in indicating that, within those who self-injure, boys and girls are equally as likely to engage in NSSI and suicide attempts.

Our study examined the duration and recency of the DSH behaviors and found a relatively lengthy course of the behaviors for such young participants (M age = 15 years), with the mean length of time engaging in any type of DSH behavior being 516 days or nearly 1½ years. Further, our findings indicated that the participants who had engaged in both suicidal and nonsuicidal self-injurious behaviors had been engaging in those behaviors for a longer time than those who had only engaged in NSSI. This may serve as indirect evidence that the longer one engages in either type of DSH behavior, the more likely she or he is to engage in the other. Of interest, those in the SA-only group reported engaging in their DSH for a longer time than those in the NSSI-only group, indicating that there are some adolescents who only attempt suicide and are unlikely to engage in other forms of DSH. Unfortunately, because of the limitations of our data, we do not know if those in the combined group engaged in NSSI first or SA first. This is an important research question because, if NSSI typically precedes SA, early intervention of NSSI may act to prevent subsequent SA.

Results indicated that the only psychiatric diagnosis specifically associated with NSSI compared to those who had not engaged in any type of DSH was having features of BPD. Those who engaged NSSI were not

more likely to have any other diagnosis. Although past research by Garrison et al. (1993) and Nock and colleagues (2006) suggested elevated rates of MDD, OCD, substance use, and externalizing disorders in those who engaged in NSSI, the methodology for each study varied significantly and likely accounted for the different findings. For example, the comparison group in the Garrison study was healthy peers and the Nock study did not have a comparison group. Our study did corroborate the Nock and colleagues' (2006) finding that rates of BPD are elevated in teens who engage in NSSI.

Similar to the psychiatric diagnosis (with the exception of BPD features) finding, those in the NSSI-only group had similar depression and suicidal ideation scores than those in the NoDSH group. These results indicate that teenagers who only engage in NSSI, and do not also engage in SA, are diagnostically similar and have similar levels of suicidal ideation, to other psychiatrically impaired teens who have not engaged in DSH, with the exception of displaying symptoms of BPD. Symptoms of BPD include difficulty regulating anger, chronic feelings of emptiness, impulsivity, unstable relationships, affective instability, and efforts to avoid abandonment (American Psychiatric Association, 1994). Further research is needed to explore which symptoms of BPD are those that are linked to NSSI to better tailor treatment efforts. It should be noted that the rates of BPD features were also elevated in the SA-only group and the combined group compared to those in the NoDSH group. Therefore, it would be wise to assess for symptoms of BPD among adolescents who seek treatment following suicidal behaviors as well.

In our first set of analyses, in which only gender was controlled for, the diagnostic profiles of those who had attempted suicide or engaged in both NSSI and suicide attempts were distinct from those who engaged in NoDSH and those who engaged in NSSI only. Specifically, the suicide attempters and those in the combined group were more likely than those in the NoDSH group and the NSSI group to be diagnosed with MDD and PTSD. The greater likelihood of being diagnosed with MDD is not surprising, as previous research has indicated a clear link between MDD and suicidal behaviors among adolescents (Gould et al., 1998). The finding that engagement in suicidal behaviors or both NSSI and suicidal behaviors but not NSSI alone was associated with PTSD was interesting. It may be expected that engagement in PTSD would also be associated with NSSI, as a symptom of PTSD is dissociation and a commonly reported reason for engaging in NSSI among adolescents is to decrease feelings of dissociation (Nock & Prinstein, 2004). It is possible that the low rate of PTSD in our sample overall may account for our failure to identify a relationship between PTSD and NSSI. As

indicated in the introduction section, the recent article by Nock et al. (2006) found a relatively high rate of PTSD (24%) among a group of adolescents who had engaged in NSSI. However, that study did not include a control group and included a subset of patients who had engaged in both SA and NSSI. It is possible that the elevated rate of PTSD was present among those who had engaged in both types of behaviors but not in those who had only engaged in NSSI.

Taking into account the frequency, duration, and recency of the deliberate self-harm behaviors, in addition to the type of behavior engaged in (NSSI only, SA only, SA + NSSI), as we did in our final set of analyses, was quite telling. With regard to both MDD and PTSD, controlling for these characteristics of DSH eliminated the significant relationship between type of DSH and diagnosis. Specifically, being in the SA group or the SA + NSSI group was no longer associated with a greater likelihood of being diagnosed with MDD or PTSD compared to the NSSI-only group. However, it is important to note that the differences in rates of MDD and PTSD across the three self-harm groups (NSSI, SA only, and SA + NSSI) remained quite large after controlling for the frequency, recency, and duration of self-harm, and the lack of a statistical difference across the three groups was likely linked to low power. The same pattern of findings was present when examining depression as a continuous outcome using BDI scores. There were no statistical differences in BDI scores across the three DSH groups (NSSI only, SA only, SA + NSSI), but the adjusted mean difference in the BDI scores between the NSSI only group and the SA + NSSI group remained quite large. Therefore, it can be concluded that taking into account the chronicity and frequency of the specific self-harm behaviors may weaken the association between type of self-harm behavior and diagnosis (MDD and PTSD) or depression levels, but the chronicity and frequency of the behaviors does not completely account for the differences among the self-harm groups. The mechanism through which the frequency and chronicity of the self-harm behaviors are linked to psychopathology is unclear. It is possible that adolescents who begin to engage in DSH at an early age have a greater disposition to overall pathology, including the likelihood to engage in both types of DSH, frequent DSH, and have high rates of psychopathology. It is also possible that the diagnoses of MDD or PTSD preceded and may have led to the DSH behaviors. Due to having only current diagnostic status, we do not know if the diagnosis preceded the DSH or vice versa.

Regardless of the frequency, duration, and recency of the DSH behaviors, those who had engaged in only NSSI reported lower levels of suicidal ideation than those in the combined group and the SA-only group

and similar levels of suicidal ideation to the no self-harm group, supporting the notion that there is a subtype of self-injurious behaviors (i.e., NSSI) that are engaged in for reasons unrelated to suicide. Our finding was in contrast to the previous work by Muehlenkamp and Gutierrez (2004) and Garrison and colleagues (1993) in which suicidal ideation was elevated in those who engaged in NSSI compared to their peers. However, it is important to note that the “peers” in the other two studies were healthy controls, whereas the peers in our study were attending an outpatient depression and suicide clinic.

Although our study has shed new light on the phenomenon of deliberate self-harm behaviors among adolescents, it was not without limitations. First, the investigation was cross-sectional in nature thus precluding the identification of causal relationships. Future prospective studies of self-harm behavior in adolescents are desperately needed. Second, the ethnic and gender composition of the study, largely Hispanic females, hinders the ability to generalize these findings to different ethnic groups and/or male individuals. However, the fact that the sample was largely Hispanic can be considered a strength of the study given that the majority of the existing research in this area has been conducted among primarily Caucasian samples.

Another major limitation of our study is linked to the fact that it was a chart review study. Because we were unable to choose the instruments and training models to be used for this study, the internal validity of the study was compromised. Specifically, the LPC, the instrument used to assess deliberate self-harm, has limited validity and reliability data available. In addition, although the K-SADS is known as a valid and reliable diagnostic tool, we do not have interrater reliability data for our sample. However, because the graduate student interviewers were trained and supervised in the use of the K-SADS and diagnoses were reached via consensus with supervisors, we are fairly confident in the validity of the diagnostic data. Nonetheless, repeating this study in a more controlled research setting would be valuable.

Our results also need to be interpreted in light of our use of the “non-zero rule” for classifying the DSH behaviors of the participants. Specifically, if a participant endorsed engaging in a behavior with ambivalent intent (with part of him or her wanting to die and another part not wanting to die) that participant was coded as having engaged in an SA. It is possible that a participant such as one described previously may differ from a participant who reported engaging in a suicide attempt in which 100% of him or her wanted to die. However, we chose to use this rule for classification, as several other researchers have promoted the use of such a system (O’Carroll et al., 1996; Posner, Oquendo, Stanley, Davies, & Gould, under review). An alternative to the

use of the non-zero rule would be to inquire about the degree of intent or wish to die as a result of an act and classify the behavior on a continuum rather than as a dichotomy. In addition, the study participants were asked to report about different self-harm behaviors that have occurred in the past. This type of retrospective assessment is vulnerable to recall bias. That is, it is possible that a participant may recall a self-injurious act to have been suicidal in nature when in fact she or he did not feel at all suicidal at the time that she or he engaged in the behavior.

Finally, it is important to note that the suicide/self-injury item on the K-SADS interview was included when making diagnoses of MDD and the other mood disorders. Therefore, the link between a diagnosis and self-harm group status (NoDSH, NSSI only, SA only, and SA + NSSI) may be partly because those in each of the self-harm groups (NSSI only, SA only, and SA + NSSI) had a history of self-injury, thus making them more likely to be diagnosed with MDD. However, the higher rates of MDD in the SA-only and SA + NSSI groups compared to NSSI-only group would not be accounted for by the inclusion of the suicide item on the K-SADS because the nonsuicidal, self-mutilative acts item was also included.

Implications for Future Research, Policy, and Practice

In conclusion, our study sought to examine the psychiatric profiles of psychiatrically impaired adolescents who had engaged in various types of DSH behaviors. In our opinion, three findings from this study have great clinical importance. First, the only diagnostic difference between those who had not engaged in any type of DSH and those who had engaged in NSSI was that those who had engaged in NSSI were more likely to have four or more symptoms of BPD. Because it is unconventional and somewhat controversial to diagnose BPD in adolescents, the assessment of BPD symptoms is often overlooked. However, the fact that each DSH group (NSSI only, SA only, and SA + NSSI) had elevated rates of BPD features compared to those with no DSH history highlights the potential role of BPD in the etiology and, therefore, treatment of DSH behaviors in adolescents. BPD should not be ignored in this age group.

Second, the importance of assessing not only the type of DSH behavior engaged in but also the frequency, duration, and recency of behaviors engaged in was highlighted in this study. Once the length and recency factors of DSH were controlled for in our analyses, the differences in rates of MDD and PTSD and depression levels across the three DSH groups (NSSI only, SA only,

SA + NSSI) declined. Therefore, not only is the specific type of self-harm behavior (in this case, suicidal behaviors) linked to certain diagnoses (PTSD and MDD), but so is the amount of time and recency of engaging in the self-harm behaviors. Specifically, it appears that the longer and more recently the behaviors are engaged in, the more severe the psychopathology.

Finally, our study verified that there is a subgroup of psychiatrically impaired adolescents who engage in NSSI only who do not have elevated suicidal ideation compared to their similarly psychiatrically impaired peers who have not engaged in NSSI or any other type of DSH. Thus, although people may engage in NSSI while having underlying passive suicidal ideation, the participants in this study who engaged in NSSI only were more similar to their non-self-harming peers than their peers who had attempted suicide. Therefore, although the importance of examining the frequency and duration of DSH behaviors is clear, findings from this study support the practice of distinguishing between nonsuicidal and suicidal self-injurious behaviors based on the presence or absence of suicidal intent.

Our findings also clearly highlight the importance of developing and refining evidence-based treatments with potential differential foci and treatment modalities for suicidal-only versus NSSI-only adolescents, as there are many teens engaging in these life-threatening and quality-of-life impairing behaviors and the treatments are few. Because an elevated rate of BPD symptoms was observed in each of the self-harm groups, one treatment option that would likely be efficacious for each group would be dialectical behavior therapy (DBT), a skills-based psychotherapy that balances acceptance and change strategies, focusing on emotion regulation skills, interpersonal effectiveness skills, distress tolerance skills, and mindfulness skills (Linehan, 1993; see Miller, Rathus, & Linehan, 2006, for a description of DBT for adolescents). Another focus of DBT includes "building a life worth living," which is specifically designed for people who are suicidal or have engaged in SA. Thus, this aspect of DBT is likely not applicable to teens who only engage in NSSI, as evidenced by our findings that those in the NSSI group did not have elevated suicidal ideation levels. It is possible that a more simplified approach to emotion regulation and/or interpersonal problem-solving skills, as opposed to the entire DBT package, may be appropriate for teens who have engaged in NSSI but not attempted suicide. Jacobson (this study's first author) and colleagues are currently conducting an open clinical trial to test the effectiveness of Interpersonal Psychotherapy for Depressed Adolescents (Mufson, Dorta, Moreau, & Weissman, 2004), an approach that focuses on managing strong emotions through improving interpersonal effectiveness skills, with teens who have engaged in NSSI and have depression.

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